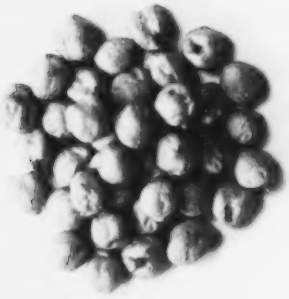
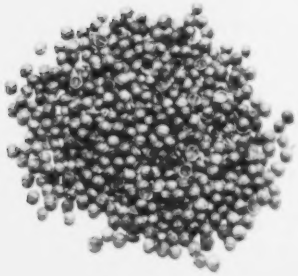
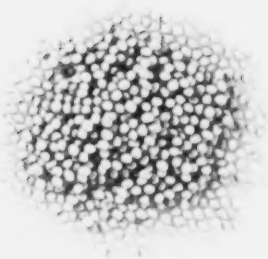
Saskatchewan
Agriculture
and Food







Crop Planning Guide 2007

SPECIALTY CROPS

pulses, oilseeds, spices and other crops

2007-04610/

Specialty Crop Planning Guide 2007

Specialty crops are now produced on more than five-million acres each year in Saskatchewan. Before deciding what to plant in 2007, producers need to evaluate the costs and the risks associated with these crops.

The crop budgets in this publication provide an estimate of costs based on recommended production practices for each crop. For some crops, the best production methods are not firmly established, and cost estimates are based on reasonable estimates of production systems.

Large variations in yields and costs exist among producers. These variations are related to location, farm size, age of machinery, and other considerations. **The budgets presented here are offered as guidelines only. These budgets do not represent actual costs and returns on your farm.** Your past farm records, which can be adjusted for expected changes in 2007, can be used to develop your own budgeting figures. Enter estimates for your own farm on the enclosed worksheet.

The cropping budgets are based on either re-cropping or fallow cropping, depending on the prevalent cropping practices or agronomic recommendations. Producers seeding a crop in a different rotation need to adjust the fallow costs accordingly.

The figures provide an estimate of variable expenses, investment and depreciation on buildings and machinery and a land cost. The yields are based on averages provided by Saskatchewan Agriculture and Food (SAF) and Saskatchewan Crop Insurance Corporation (SCIC). For crops with insufficient yield history, yields were based on SAF Special Crop surveys and data from Saskatchewan's Crop Development Centre. Crop prices are based on historical prices adjusted for anticipated supply and demand.

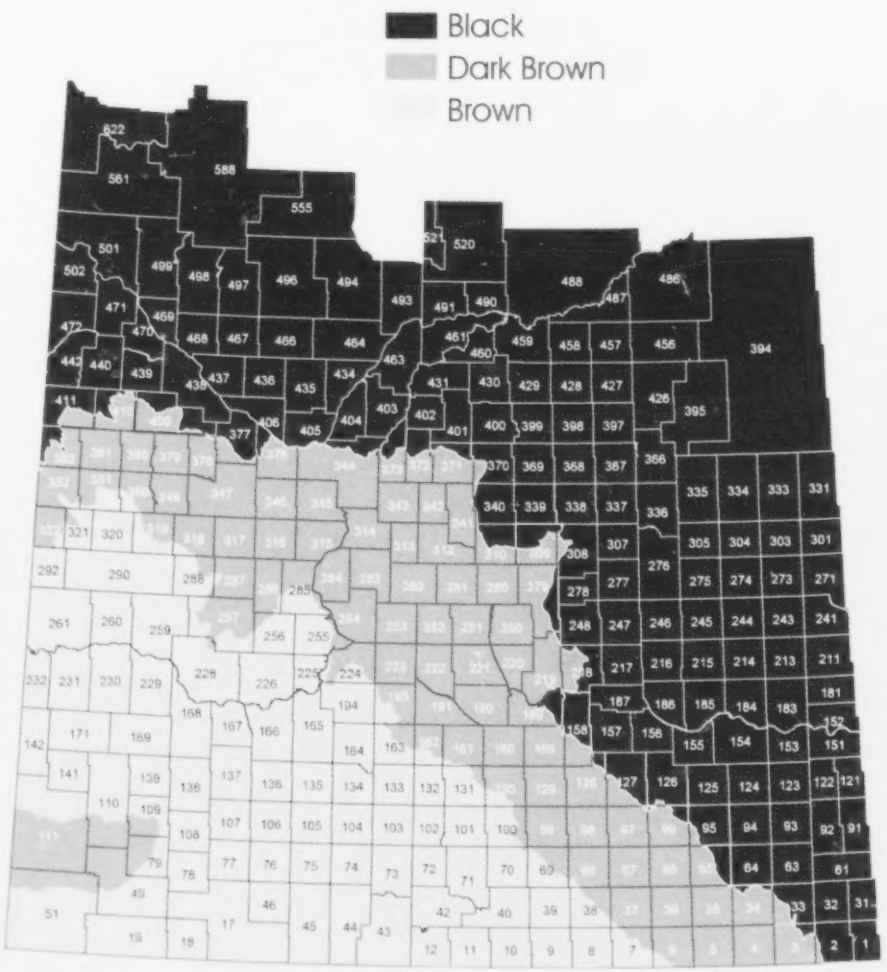
Short-term decisions among various crops can be made on the basis of returns over variable expenses. Long-term decisions must include all costs, including fixed costs for machinery, buildings and land. Some new crops may require changes to machinery and buildings. These new crops would be considered as long-term decisions.

Producers who may be considering the replacement of some of their traditional crops with new crops will want to give special consideration to the higher risk associated with specialty crops. Many specialty crops have higher profit potential than traditional crops, but these crops also have greater variations in yield, grade and price. Some require an extended growing season, or have particular climate requirements, which could produce very low yields in some years. Markets for some of these crops are small and variable and may experience limited movement.

Use the following methods to reduce risk:

- Start with a small acreage until production methods have been learned.
- Contract for price and delivery if markets are uncertain.
- Maintain crop diversity by limiting the acreage of a new crop to a reasonable portion of your total acreage.
- Practice the best weed control available.
- Insure against yield loss with crop insurance if it is available.

Soil Zones of Southern Saskatchewan



Specialty Crops Assumptions

1. **Seed including cleaning**:
   A) Pulse:
   - Large Green lentil 90 lb./ac. at $0.21/lb.
   - Small Green lentil 45 lb./ac. at $0.20/lb.
   - Red lentil 45 lb./ac. at $0.20/lb.
   - Green pea 180 lb./ac. at $0.14/lb.
   - Yellow pea 180 lb./ac. at $0.12/lb.
   - Feed pea 180 lb./ac. at $0.11/lb.
   - Pinto Bean 100 lb./ac. at $0.40/lb.
   - Desi Chickpea 95 lb./ac. at $0.29/lb.
   - Kabuli Chickpea 9 mm 150 lb./ac. at $0.48/lb.
   - Kabuli Chickpea 7 mm 110 lb./ac. at $0.36/lb.
   - Fababean 180 lb./ac. at $0.18/lb.

   B) Oilseed:
   - Early Short Sunflower 7 lb./ac. at $4/lb.
   - Standard Sunflower 5 lb./ac. at $6/lb.
   - Yellow Mustard 10 lb./ac. at $1.82/lb. treated
   - Oriental Mustard 8 lb./ac. at $1.77/lb. treated
   - Brown Mustard 10 lb./ac. at $1.77/lb. treated
   - Safflower 30 lb./ac. at $0.30/lb.

   C) Spice and Other Crops:
   - Winter wheat 105 lb./ac. at $0.09/lb.
   - Canary seed 35 lb./ac. at $0.23/lb.
   - Buckwheat 50 lb./ac. at $0.30/lb.
   - Caraway 10 lb./ac. at $0.65/lb.
   - Dill 8 lb./ac. at $0.56/lb.
   - Coriander 25 lb./ac. at $0.35/lb.
   - Fenugreek 30 lb./ac. at $0.55/lb.
   - Borage 15 lb./ac. at $4.75/lb.
   - Seed prices used were either an average of common seed and seed grower prices or just seed grower prices.

2. **Fertilizer:**
   Nitrogen based on 46-0-0 at $412/tonne ($.41/lb.)
   - Black soil zone: 30 lb. N/ac. fallow and 60 lb. N/ac. stubble
   - Dark Brown soil zone: 25 lb. N/ac. fallow and 50 lb. N/ac. stubble except for Coriander and Canary where 35 lb. N/ac. is recommended.
   - Brown soil zone: 20 lb. N/ac. fallow and 45 lb. N/ac. stubble
   - Nitrogen on lentil, pea, chickpea, fababean and fenugreek 6 lb. N/ac. based on 50 lb. of 12-51-0
   - Nitrogen on pinto bean 50 lb./ac.
   - Nitrogen on winter wheat 75 lb./ac.

   Phosphorus based on 12-51-0 $417/tonne ($.27/lb.)
   - The recommended rates of seed-placed phosphate are as follows: cereals 30 lb./ac.; oilseeds 15-20 lb./ac.; pulses 15-20 lb./ac.; spices 15-20 lb./ac. Source: SAF.

   Sulphur based on 20-0-0-24 at $290/tonne ($.20/lb.)
   - Sulphur on mustard at 10 lb. S/ac.
   - *Caraway: is a three-year crop and sown with a cover crop. In the year of establishment, the fertilizer costs are attributed to the cover crop. In its second and third year, 50 lb. of N/ac./year are applied to the crop.

3. **Pesticides:**
   Herbicides:
   - All crops were 100% treated for wild oats where registered, except for canary seed which was 25% treated (to be consistent with the soil zone guides). There was no wild oat treatment for winter wheat.
   - Caraway: for wild oat control, several herbicides are registered. Caraway takes a year to establish; therefore, in the first year, the chemical costs were applied to the cover crop.
   - All crops were 100% treated for broadleaves where registered, except there was no application for broadleaf control to the mustards to maintain consistency with the soil zone guides.
   - Borage: received a pre-plant burn off only because no herbicides are registered for use in crop.

   Insecticide and Others:
   - All crops receive seed treatment or inoculation except canary, dill, borage and winter wheat
   - Canary seed: insect control 20% of acres
   - Mustard: insect control 10% of acres
   - Lentil: fungicide 20% of acres, desiccation 75% of acres. Insecticide 20% of acres per year for grasshoppers
   - Pea: desiccation 25% of acres except feed peas, which is at 10%. Insecticide 10% of acres for pea aphids
   - Pinto bean: fungicide 75% of acres, seed treatment 100% of acres, seed insecticide 50% of acres, seed inoculant 25% of acres
   - Desi Chickpea - fungicide 100% of acres, one application
   - Kabuli Chickpea Large – fungicide 100% of acres, two applications
   - Kabuli Chickpea Small – fungicide 100% of acres, one application
   - Sunflower: insect control 20% of acres
   - Winter Wheat: pre-seed glyphosate treatment @1.0 L/ac. on 50% of acres

4. **Fuel costs** are based on estimated fuel consumption for the various farming operations with diesel fuel priced at 65 cents/litre.

5. **Machinery repair** rates are 4% of machinery investment per year for pea, lentil, pinto bean, chickpea, fababean, sunflower and safflower and 3% for all other crops.

6. **Saskatchewan Crop Insurance Corporation (SCIC)** premiums are based on 70% of the risk area(s) coverage plus 20%. Not all crops are insurable through SCIC.

7. **Building repair** rates are 5% of building investment per acre.

8. **Operating interest** is calculated on all cash operating costs at 5.7% for 6 months on all crops, 18 months for fallow.

9. **Machinery depreciation** is calculated at 10% of machinery investment per year on a straight-line basis.

10. **Building depreciation** is based on a specified building investment for each soil zone multiplied by 5% per year on a straight-line basis.

11. **Average machinery investment** is calculated for each soil zone. An additional machinery investment of $35 per seeded acre is assumed for most crops in this guide due to their specialized nature.

12. **Investment cost** on building and machinery investment is calculated at a rate of 5.7% on the investment per acre.

13. **Land investment cost** is based on average land values in each soil zone multiplied by 4.5% as a return on investment.

14. **Crop prices** for 2007 production are farm gate price estimates for 2007 crop production, provided by SAF in December 2006.

15. **Crops** that appear in both the Crop Planning Guides and the Specialty Crops Guide that share the same soil zone and are continuous cropped have their yields averaged between SAF's 10-year averages and SCIC yields plus 20%. These crops are large green lentil (dark brown soil zone), feed pea (black soil zone), brown mustard (brown soil zone) and canary seed (dark brown soil zone).

16. **Labour and management.** These budgets do not include an estimate for owner/operator labour and management. This value varies greatly, and farm managers need to determine their own actual labour and management cost.

Revised December 2006
by the Crop Development Branch, SAF

CROP PRODUCTION COSTS ($/ACRE) SPECIALTY CROPS 2007

	PULSE CROPS										
CROP	#1 Large Green Lentil	#1 Small Green Lentil	#1 Red Lentil	#1 Green Pea	#1 Yellow Pea	Feed Pea	Pinto Bean*	#1 Desi Chickpea	#1-9mm Kabuli C'pea	#1-7mm Kabuli C'pea	Fababean (Feed)
Type of Rotation	Re-crop	Re-crop	Re-crop	Re-crop	Re-crop	Re-crop	Fallow	Re-crop	Re-crop	Re-crop	Re-crop
Rotation Years Required to Grow This Crop	1	1	1	1	1	1	2	1	1	1	1
Soil Zone	DBrown	DBrown	DBrown	Black	Black	Black	DBrown	Brown	Brown	Brown	Black
REVENUE PER ACRE											
Estimated Yield (bu/ac.lb/ac) (A)	1158.00	1302.00	1224.00	28.60	30.00	31.30	1000.00	1003.00	891.00	1120.00	1335.00
Est. On Farm Market Price/bus.lb (B)	0.17	0.16	0.15	5.20	4.90	4.35	0.21	0.17	0.32	0.19	0.09
Estimated Gross Revenue/ac (AxB)=(C)	**196.86**	**208.32**	**183.60**	**148.72**	**147.00**	**136.16**	**210.00**	**170.51**	**285.12**	**212.80**	**120.15**
EXPENSES PER ACRE											
Variable Expenses/acre											
Seed	18.90	9.00	9.00	25.20	21.60	19.80	40.00	27.55	72.00	39.60	32.40
Fertilizer - Nitrogen	2.46	2.46	2.46	2.46	2.46	2.46	20.50	2.46	2.46	2.46	2.46
- Phosphorus	5.40	5.40	5.40	4.05	4.05	4.05	6.75	5.40	5.40	5.40	8.10
- Sulphur & Other	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Chemical*** - Herbicides/Fungicides	35.25	35.25	35.25	26.29	26.29	24.11	66.63	39.99	58.64	39.99	38.56
- Insecticides	1.11	1.11	1.11	0.48	0.48	0.48	0.00	0.00	0.00	0.00	0.00
- Seed Treatment/Innoculant	1.80	0.90	0.90	3.60	3.60	3.60	9.50	1.90	10.50	7.70	7.20
Machinery Operating - Fuel	14.30	14.30	14.30	14.30	14.30	14.30	12.35	14.30	14.30	14.30	14.30
- Repair	8.04	8.04	8.04	9.00	9.00	9.00	8.04	7.16	7.16	7.16	7.60
Custom Work & Hired Labour	5.75	5.75	5.75	5.00	5.00	5.00	4.50	4.50	4.50	4.50	4.50
Crop Insurance Premium	12.16	15.75	15.19	5.38	5.38	5.38	0.00	10.18	21.26	16.15	5.74
Utilities & Miscellaneous	5.21	5.21	5.21	5.30	5.30	5.30	5.21	3.52	3.52	3.52	5.30
Interest on Variable Expenses	3.15	2.94	2.92	2.85	2.78	2.66	4.94	3.33	5.69	4.01	3.60
Total Variable Expenses (D)	**113.52**	**106.11**	**105.53**	**103.94**	**100.24**	**96.14**	**178.42**	**120.30**	**205.43**	**144.80**	**129.75**
Other Expenses/acre											
Building Repair	1.20	1.20	1.20	1.60	1.60	1.60	1.20	0.90	0.90	0.90	1.60
Property Taxes	5.54	5.54	5.54	6.19	6.19	6.19	5.54	4.89	4.89	4.89	6.19
Insurance & Licences	2.00	2.00	2.00	2.36	2.36	2.36	2.00	1.31	1.31	1.31	2.36
Machinery Depreciation	20.10	20.10	20.10	22.50	22.50	22.50	20.10	17.90	17.90	17.90	19.00
Building Depreciation	1.20	1.20	1.20	1.60	1.60	1.60	1.20	0.90	0.90	0.90	1.60
Machinery Investment	11.46	11.46	11.46	12.83	12.83	12.83	11.46	10.20	10.20	10.20	10.83
Building Investment	1.37	1.37	1.37	1.82	1.82	1.82	1.37	1.03	1.03	1.03	1.82
Land Investment	15.30	15.30	15.30	17.33	17.33	17.33	15.30	13.95	13.95	13.95	17.33
Total Other Expenses (E)	**58.17**	**58.17**	**58.17**	**66.23**	**66.23**	**66.23**	**58.17**	**51.08**	**51.08**	**51.08**	**60.73**
Labour and Management**** (F)											
Total Expenses (D+E+F)=(G)	**171.69**	**164.27**	**163.70**	**170.17**	**166.47**	**162.37**	**236.59**	**171.38**	**256.51**	**195.87**	**190.49**
Summerfallow Cost (H)	0.00	0.00	0.00	0.00	0.00	0.00	56.27	0.00	0.00	0.00	0.00
Total Rotation Expense (G+H)=(I)	**171.69**	**164.27**	**163.70**	**170.17**	**166.47**	**162.37**	**292.86**	**171.38**	**256.51**	**195.87**	**190.49**
RETURNS PER ACRE											
Return Over Variable Expenses (C-D)	**83.34**	**102.21**	**78.07**	**44.78**	**46.76**	**40.01**	**12.59**	**50.21**	**79.69**	**68.00**	**-9.60**
Return Over Total Rotation Expenses (C-I)	**25.17**	**44.05**	**19.90**	**-21.45**	**-19.47**	**-26.22**	**-82.86**	**-0.87**	**28.61**	**16.93**	**-70.34**
BREAK-EVEN YIELD (lbs or bus per acre)											
To Cover Variable Expenses	**667.8**	**663.2**	**703.6**	**20.0**	**20.5**	**22.1**	**849.6**	**707.6**	**642.0**	**762.1**	**1441.7**
To Cover Total Rotation Expenses	**1009.9**	**1026.7**	**1091.3**	**32.7**	**34.0**	**37.3**	**1394.6**	**1008.1**	**801.6**	**1030.9**	**2116.5**
BREAK-EVEN PRICE (per lb or bus)											
To Cover Variable Expenses	**0.10**	**0.08**	**0.09**	**3.63**	**3.34**	**3.07**	**0.18**	**0.12**	**0.23**	**0.13**	**0.10**
To Cover Total Rotation Expenses	**0.15**	**0.13**	**0.13**	**5.95**	**5.55**	**5.19**	**0.29**	**0.17**	**0.29**	**0.17**	**0.14**

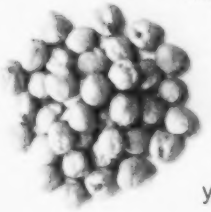
* Yield and costs are for Dryland Pinto Beans only.

** Expenses shown are for two years (year 1 and 2) and revenue is from 2 years (year 2 and 3) of Caraway seed production. Average return per year over total expenses is $32.70 divided by 2 equals $16.35 per year. The expenses associated with the cover crop in year 1 are covered by the revenue from the cover crop.

*** Only registered chemicals are included.

**** These budgets do not include an estimate for owner/operator labour and management. This value varies greatly and depends on both the farm manager's needs as well as the ability of the farm to generate income. Farm managers need to determine their own actual labour and management costs and add it to total expenses.

USING THE 2007 SPECIALTY CROP BUDGETS



The relative profitability of crops can be difficult to determine when they are part of a longer-term rotation. Profits are easier to compare based on the net returns per rotation acre, which is the average profit or loss per acre, per year for a particular crop rotation.

Step 1. Adjust the crop budgets for the crops to be compared.
The crop budgets shown in this report are based on estimated costs and returns for each crop. The actual costs and returns on your own farm may be different.

You may wish to change costs to suit the conditions on your own farm.

Step 2. Calculate the average returns per rotation acre.
Use the table below to list the different rotations of crops and fallow which you are considering for your farm. Show the complete rotation from the first year to the last year. Use the adjusted crop budgets for your own farm to calculate the average return per rotation acre for various rotations.

Crop Rotation Returns	Source	Example 1 – Brown and Dark Brown Soil Zones Specialty Crops			Rotation 1		Rotation 2		Rotation 3	
		Crop	Return over Total Expenses ($/acre)	Return over Variable Expenses ($/acre)	Crop	Return $/acre	Crop	Return $/acre	Crop	Return $/acre
Year 1	Brown Soil Zone	Spring Wheat	$ (14.02)	$ 31.57						
Year 2	Specialty Crops	Kabuli 7mm	$ 16.93	$ 68.00						
Year 3	Brown Soil Zone	Barley	$ (24.38)	$ 21.20						
Year 4	Specialty Crops	Yellow Mustard	$ (7.46)	$ 38.12						
Year 5	Specialty Crops	Canary Seed	$ 28.53	$ 81.20						
Year 6	Specialty Crops	Large Green Lentil	$ 25.17	$ 83.34						
Total Returns			$ 24.77	$ 323.43						
Total # of years in rotation			6	6						
Return per rotation acre			$ 4.13	$ 53.91						

In this example, all crops are conventionally seeded.
In this example, both returns over total expenses and returns over variable expenses are calculated. If the average return is negative, then the rotation with the smallest negative return would be best.

SPECIALTY CROP PRODUCTION COSTS ($/ACRE) MY FARM	USE THIS WORKSHEET TO ADJUST THE CROP BUDGETS TO YOUR FARM COSTS			
REVENUE PER ACRE				
A Estimated yield (bu./ac.; lb./ac.)				
B Estimated on-farm market price per bushel or per pound				
C Estimated Gross Revenue per Acre				
EXPENSES PER ACRE				
Variable Expenses per Acre				
Seed				
Fertilizer: Nitrogen				
Phosphorus				
Sulphur and Other				
Chemical: Herbicides				
Insecticides				
Seed Treatment/Fungicides				
Machinery Operating: Fuel				
Repair				
Custom Work and Hired Labour				
Crop Insurance Premium				
Utilities and Miscellaneous				
Interest on Variable Expenses				
D Total Variable Expenses per Acre				
Other Expenses per Acre				
Building Repair				
Property Taxes				
Insurance and Licences				
Machinery Depreciation				
Building Depreciation				
Machinery Investment				
Building Investment				
Land Investment				
E Total Other Expenses				
F Labour and Management*				
G Total Expenses per acre (D+E+F)				
H Summerfallow cost				
I Total Rotation Expense (G+H)				
RETURNS PER ACRE				
Return over Variable Expenses (C-D)				
Return over Total Rotational Expenses (C-I)				
BREAK-EVEN YIELD PER ACRE (lb./ac. or bu./ac.)**				
To Cover Variable Expenses				
To Cover Total Rotation Expenses				
BREAK-EVEN PRICE (per bushel or per pound)**				
To Cover Variable Expenses				
To Cover Total Rotation Expenses				

* These budgets do not include an estimate for owner/operator labour and management. Farm managers need to determine their own actual labour and management costs and add it to total expenses.

** The break-even yields and prices for summerfallow crops should include the previous years' tillage fallow expenses.

OILSEED CROPS						SPICE AND OTHER CROPS							
Early,Short Sunflower	Standard Sunflower	Yellow Mustard	Oriental Mustard	Brown Mustard	Safflower	Winter Wheat	Canary Seed	Buckwheat	Caraway**	Dill	Coriander	Fenugreek	Borage
Re-crop 1	Re-crop 1	Re-crop 1	Re-crop 1	Re-crop 1	Fallow 2	Re-crop 1	Re-crop 1	Fallow 2	Re-crop 3	Fallow 2	Re-crop 1	Fallow 2	Fallow 2
DBrown	DBrown	Brown	Brown	Brown	Brown	Black	DBrown	DBrown	Black	Black	DBrown	Brown	Black
1072.00	1142.00	675.00	833.00	785.00	676.00	44.90	958.60	609.00	536.60	800.00	673.80	900.00	176.30
0.14	0.16	0.20	0.17	0.17	0.16	4.00	0.17	0.15	0.31	0.27	0.18	0.24	2.05
150.08	**182.72**	**135.00**	**141.61**	**133.45**	**108.16**	**179.60**	**162.96**	**91.35**	****332.69**	**216.00**	**121.28**	**216.00**	**361.42**
28.00	30.00	18.20	14.16	17.70	9.00	9.45	8.05	15.00	6.50	4.48	8.75	16.50	71.25
20.50	20.50	18.45	18.45	18.45	8.20	30.75	14.35	10.25	41.00	12.30	14.35	2.46	10.25
5.40	5.40	5.40	5.40	5.40	5.40	8.10	8.10	5.40	5.40	5.40	5.40	5.40	5.40
0.00	0.00	2.00	2.00	2.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
27.02	27.02	17.09	17.09	17.09	19.18	10.65	11.33	17.80	45.21	26.28	39.24	22.65	2.40
0.57	0.57	0.42	0.42	0.42	0.00	0.00	1.92	0.00	0.00	0.00	0.00	0.00	0.00
0.49	0.35	0.00	0.00	0.00	1.20	2.70	0.00	1.50	0.30	0.00	0.75	1.50	0.00
14.30	14.30	13.65	13.65	13.65	11.05	9.10	13.00	12.35	26.00	11.05	13.00	11.05	11.05
7.12	7.44	4.32	4.32	4.32	6.16	5.70	4.98	4.98	10.56	5.70	5.58	4.62	4.62
5.50	5.50	5.00	5.00	5.00	4.50	4.50	6.75	4.50	9.00	4.50	4.50	4.50	4.50
9.28	10.43	6.14	6.52	6.36	0.00	5.78	5.81	0.00	27.98	0.00	8.30	0.00	0.00
5.21	5.21	3.52	3.52	3.52	3.52	5.30	5.21	5.21	10.60	5.30	5.21	3.52	5.30
3.52	3.61	2.68	2.58	2.68	1.94	4.81	2.27	2.19	6.94	2.14	2.99	2.06	3.27
126.91	**130.33**	**96.88**	**93.11**	**96.59**	**70.16**	**96.84**	**81.76**	**79.19**	**189.49**	**77.15**	**108.07**	**74.26**	**118.04**
1.20	1.20	0.90	0.90	0.90	0.90	1.60	1.20	1.20	2.40	1.60	1.20	0.90	1.20
5.54	5.54	4.89	4.89	4.89	4.89	6.19	5.54	5.54	12.38	6.19	5.54	4.89	6.19
2.00	2.00	1.31	1.31	1.31	1.31	2.36	2.00	2.00	4.72	2.36	2.00	1.31	2.36
17.80	18.60	14.40	14.40	14.40	15.40	19.00	16.60	16.60	35.20	19.00	18.60	15.40	15.40
1.20	1.20	0.90	0.90	0.90	0.90	1.60	1.20	1.20	2.40	1.60	1.20	0.90	1.20
10.15	10.60	8.21	8.21	8.21	8.78	10.83	9.46	9.46	20.06	10.83	10.60	8.78	8.78
1.37	1.37	1.03	1.03	1.03	1.03	1.82	1.37	1.37	2.74	1.82	1.37	1.03	1.37
15.30	15.30	13.95	13.95	13.95	13.95	17.33	15.30	15.30	30.60	17.33	15.30	13.95	15.30
54.55	**55.81**	**45.58**	**45.58**	**45.58**	**47.15**	**60.73**	**52.67**	**52.67**	**110.50**	**60.73**	**55.81**	**47.15**	**51.80**
181.46	**186.14**	**142.46**	**138.70**	**142.17**	**117.31**	**157.57**	**134.43**	**131.86**	**299.99**	**137.89**	**163.88**	**121.41**	**169.84**
0.00	0.00	0.00	0.00	0.00	47.21	0.00	0.00	56.27	0.00	62.94	0.00	47.21	62.94
181.46	**186.14**	**142.46**	**138.70**	**142.17**	**164.52**	**157.57**	**134.43**	**188.13**	**299.99**	**200.83**	**163.88**	**168.62**	**232.78**
23.17	**52.39**	**38.12**	**48.50**	**36.86**	**21.46**	**82.76**	**81.20**	**-6.83**	**143.20**	**119.37**	**13.21**	**125.20**	**223.89**
-31.38	**-3.42**	**-7.46**	**2.91**	**-8.72**	**-56.36**	**22.03**	**28.53**	**-96.78**	****32.70**	**15.17**	**-42.60**	**47.38**	**128.64**
906.5	**814.6**	**484.4**	**547.7**	**568.2**	**438.5**	**24.2**	**481.0**	**527.9**	**305.6**	**285.7**	**600.4**	**309.4**	**57.6**
1296.2	**1163.4**	**712.3**	**815.9**	**836.3**	**1028.2**	**39.4**	**790.8**	**1254.2**	**483.9**	**743.8**	**910.5**	**702.6**	**113.6**
0.12	**0.11**	**0.14**	**0.11**	**0.12**	**0.10**	**2.16**	**0.09**	**0.13**	**0.18**	**0.10**	**0.16**	**0.08**	**0.67**
0.17	**0.16**	**0.21**	**0.17**	**0.18**	**0.24**	**3.51**	**0.14**	**0.31**	**0.28**	**0.25**	**0.24**	**0.19**	**1.32**

For more information, phone the Agriculture Knowledge Centre, toll free, at 1-866-457-2377,
or the Provincial Special Crops Specialist, at 306-787-4660,
or the Provincial Crop Economics Specialist, at 306-787-6613.

Revised December 2006 by the Crop Development Branch, Saskatchewan Agriculture and Food

Specialty Crop Highlights

Crop	Type	LB/ BU	Adaptation	Seed Rate LB/AC	Seeds per LB	Weed Control	Crop Height inches	Days to Maturity	Harvest Method	Safe Storage Moisture	Crop Quality Factors	Markets	Expected Yield Range (lb/ac)
Large Green Lentil	Annual pulse	60	Indeterminate crop, requires some stress to mature seed. Seed early.	90	5,000- 7,000	Several registered herbicides.	16-20	53 days to flower	Swath or desiccate and direct combine. Pick-up reels, floating cutter bar preferred.	Below 14%	Light green seed.	Human food	900-1200
Small Green Lentil	Annual pulse	60	Requires some stress to mature seed. More determinate than Large Green. Seed early.	45	11,000- 13,500	Several registered herbicides.	12-16	49 days to flower	Swath or desiccate and direct combine. Pick-up reels, floating cutter bar preferred.	Below 14%	Light green seed.	Human food	1000-1400
Red Lentil	Annual pulse	60	Requires some stress to mature seed. More determinate than Large Green. Seed early.	45	11,000 -13,500	Several registered herbicides.	12-16	49 days to flower	Swath or desiccate and direct combine. Pick up reels, floating cutter bar preferred.	Below 13%	Red seed, smaller than large green lentil. Seed colour grading factors are different than green lentil.	Human food	1000-1300
Green Pea	Annual pulse	60	Prefers moist, cool conditions. Seed early.	150-200	1,600- 2,300	Several registered herbicides.	20-30	92 - 100	Swath or desiccate and direct combine. Pick-up reels and lifters preferred.	Below 16%	Uniform green seed free from damage. Less than 5% bleached.	Human food or feed	1250-2000
Yellow Pea	Annual pulse	60	Prefers moist, cool conditions. Seed early.	150-200	1,300- 2,300	Several registered herbicides.	20-43	93 - 105	Swath or desiccate and direct combine. Pick-up reels and lifters preferred.	Below 16%	Large round smooth yellow seed free from damage.	Human food or feed	1250-2400
Feed Pea	Annual pulse	60	Prefers moist, cool conditions. Seed early.	120-180	1,300- 2,300	Several registered herbicides.	20-43	93 - 105	Swath or desiccate and direct combine. Pick-up reels and lifters preferred.	Below 16%	Various sizes and colours.	Feed	1250-2400
Pinto Bean narrow row and dry land	Annual pulse	60	Heat and moisture loving. Seed in late May. No frost tolerance.	80-140	1,100- 1,600	Several registered herbicides. Seed treatment recommended.	12-20	95 - 112	Pick-up reel and floating cutter bar required. Swathing preferred. Swath when tough.	14% - 16%	Sound whole seed, avoid seed damage.	Human food	800-1500 Dry land
Desi Chickpea	Annual pulse	60	Indeterminate crop, Brown & Dark Brown soils.	80-90	1,350- 2,300	Sencor, Poast & Select herbicides are registered. Use clean fields.	12-20	110 - 120	Direct combine or swath and combine.	Below 14%	Sound whole seed, avoid seed damage.	Human food	1050-1450
Kabuli Chickpea 9mm and 7mm	Annual pulse	60	Indeterminate crop, Brown soils. Seed after soil reaches 10C at seeding depth.	120-180 100-110	1,100- 2,000 1,200- 2,200	Sencor, Poast & Select herbicides are registered. Use clean fields. Seed treatment recommended.	14- 20 14- 20	110 – 125 110 – 120	Direct combine or swath and combine.	Below 14%	Sound whole seed, avoid seed damage. Light coloured seed coat, green seed.	Human food	900-1300 1000-1400
Fababean	Annual pulse	60	High moisture areas or irrigation.	120-180	800 - 1,350	Several herbicides registered.	40-60	110 - 120	Swath and combine.	Below 16%	Avoid splitting and cracking.	High protein feed	1000-1600
Safflower	Annual oilseed or birdseed	40	High heat requirements, Brown and Dark Brown soil zones.	22-30	4,500- 5,500	Trifluralin, Edge and Poast are registered herbicides.	20-30	115 - 125	Direct combine preferred.	Below 9.5%	Bright white for birdseed, well filled.	Birdseed or edible oil	600-750
Standard Sunflower	Annual oilseed	30	High heat requirements, South-east Saskatchewan.	5	4,500- 6,800	Trifluralin, Edge and Select are registered herbicides.	60	110 - 125	Direct combine with sunflower attachment.	Below 10%	Premiums for high oil content.	Edible oil and confection	700-1000
Early Short Statured Sunflower	Annual oilseed	30	Moderate heat requirements. Brown, Dark Brown and Thin Black soils.	7-10	11,000- 13,500	Trifluralin, Edge and Select are registered herbicides.	24-35	99 - 103	Swath and combine or direct combine with standard equipment.	Below 10%	Premiums for high oil content.	Edible oil and birdseed	700-1000
Yellow Mustard	Annual oilseed	50	Better seed quality in drier areas.	9-12	100,000	Several registered herbicides.	30-40	90 - 93	Direct combine or swath and combine.	Below 9.5%	Bright yellow seed.	Condiment	550-700
Brown Mustard	Annual oilseed	50	More heat and drought tolerant than canola.	7-10	200,000	Several registered herbicides.	40-48	91 - 94	Swath and combine.	Below 9.5%	Dark reddish brown seed.	Condiment	620-900
Oriental Mustard	Annual oilseed	50	More heat and drought tolerant than canola.	5-9	200,000	Several registered herbicides.	40-48	91 - 93	Swath and combine.	Below 9.5%	Bright golden seed.	Condiment	620-900
Fenugreek	Annual legume	60	Indeterminate crop, Brown and Dark Brown soil zones. Late maturing	22-30	23,000 - 27,000	Odyssey, Select and Centurion herbicides are registered. Use clean fields.	12-24	115 - 130	Resists shattering, direct combine or swath and combine.	Below 12%	Golden coloured seed.	Spice ingredient, pharmaceutical, health food	550-900
Buckwheat	Annual grain	48	Widely adapted but sensitive to frost anytime and heat and drought during seed set.	35-55	13,000 - 16,000	Several herbicides registered for grassy weed control.	40-60	80 - 90	Swath when 75% mature.	Below 16%	Tan coloured seed, do not mix old (reddish-brown dehulled) and new (greenish dehulled) crop.	Human food	550-700
Winter Wheat	Winter Annual	60	High yield potential with adequate moisture and nutrients. Needs snow cover for winter survival. Seeding date and depth critical.	90-120	12,000- 14,000	Fall or early spring application for broad leaf weed control.	30-40	210-225 days after Jan. 1	Direct combine or swath and combine. Sprouts easily in the swath.	Below 14%	Adequate nitrogen is needed to meet yield and protein potential.	Feed, food and ethanol	2100-3600
Canary Seed	Annual birdseed	50	Moderate moisture requirements, shallow rooted.	22-35	65,000	Several herbicides registered.	40-60	95 - 105	Swath and combine or direct combine. Shatter resistant.	Below 13%	Avoid dehulling seed.	Birdseed	900-1050
Borage	Annual oilseed	34	Moisture loving, seed late to increase GLA content of the oil. Recommended for the Black soil zone.	9-15	13,500 (est.)	No registered herbicides. Use clean fields.	24-40	85	Ripens unevenly, shatters most of the seed, swath.	Below 10%	Avoid volunteer cereal crops which are difficult to separate.	Oil extracted for nutraceutical	150-200
Dill	Annual spice	27	Yields best in cool conditions, moderate moisture.	5-9	90,000 (est.)	Poast, Lorox and Edge are registered herbicides.	40	105 - 115	Swath and combine.	Below 10%	Clean seed, oil content.	Flavouring	270-1000
Caraway	Biennial spice	35	Widely adapted, yields best under moderate moisture.	10	90,000 (est.)	Several herbicides are registered.	12-28	Biennial, matures early Aug.	Swath when approximately 75% of seeds have turned brown.	Below 10%	Brown with dark stripes. Avoid green seed.	Flavouring	450-700
Coriander	Annual spice	22	Heat loving, late maturing.	25	50,000	Several herbicides are registered.	24-40	95-110	Direct combine or swath then immediately combine.	Below 10%	Fully mature brown seeds, splits below 5%.	Flavourings and perfumes	550-800

Saskatchewan Agriculture and Food
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